PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference TP103028/SAV	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/FI2004/050075	International filing date *(day/month/year)* 24.05.2004	Priority date *(day/month/year)* 23.05.2003
International Patent Classification (IPC) or national classification and IPC B05D7/00, B05D3/02		
Applicant METSO PAPER, INC		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☐ *sent to the applicant and to the International Bureau)* a total of sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
16.12.2004	13.09.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Slembrouck, I Telephone No. +31 70 340-4326

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FI2004/050075

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-7	as originally filed

Claims, Numbers

2-6	as originally filed
1, 7	received on 16.12.2004 with letter of 10.12.2004

Drawings, Sheets

1/1	as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2-6
	No:	Claims	1
Inventive step (IS)	Yes:	Claims	2 4
	No:	Claims	1 3 5 6
Industrial applicability (IA)	Yes:	Claims	1-6
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

The following documents are referred to in this communication:

D1 : US 6 409 645 B1 (PAASONEN JAN A ET AL)
25 June 2002 (2002-06-25)
D2 : US 5 601 920 A (PAASONEN JAN A ET AL)
11 February 1997 (1997-02-11)
D3 : US 3 184 828 A (DAMES JR CARL W)
25 May 1965 (1965-05-25)

Added Subject matter (Article 34(2)(b) PCT)

(1) The amendments filed with the letter dated 10.12.2004 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following:

in claim 1: (...) that its curing or solidifying temperature is lower than that of the topmost polymer material layer (...)

It is clear to the Examining Authority, that the hereabove underlined amendment is not present in the description as originally filled (see description p. 4, l. 7-10).

in claim 7: (...) the material of the surface layer has the curing or solidifying temperature which is lower than that of the topmost polymer material layer (...)

It is clear to the Examining Authority, that the hereabove underlined amendment is not present in the description as originally filled (see description p. 4, l. 6-10).

(2) The attention of the applicant is brought to the fact that the following amendment:

in claim 1: (...) the base layer is formed on the roll frame, subsequently, the

surface layer is formed on the base layer (...)

is not, to the opinion of the Examining Authority, sufficiently and undoubtably derivable from the description passage mentioned by the applicant (see description p. 4, l. 12-16); however support can be found in original claim 2 of the application. This amendment is therefore allowed

(2) As some amendments introduced by the applicant in the communication dated 10.12.2004 have been rejected, the objections of the Examining Authority raised in communication dated 06.10.2004 are maintained.

Novelty (Article 33(2) PCT)

(3) Document D1 discloses (see D1: col. 6 l. 23-41; fig. 4a-4c):

> a method for manufacturing a roll coating on a roll frame, which coating comprises a base layer on the roll frame and a surface layer on the base layer. The base layer is brought to its final form (here: the compressive layer is filled with a polymer) after the surface layer has been cured.

The subject-matter of claim 1 is therefore not new (Article 33(2) PCT).

(4) Document D2 discloses (see D2: col. 4 l. 40-50; fig. 2; cl. 1, 3, 12-14 and 21):

> a method for manufacturing a roll coating on a roll frame, which coating comprises a base layer on the roll frame and a surface layer on the base layer. The base layer is brought to its final form (here: calculated compressed state) after the surface layer has been cured.

The subject-matter of claim 1 is therefore also not new regarding D2 (Article 33(2) PCT).

(5) Document D3 discloses (see D3: cl. 1; fig. 2, 5, 8 and 9):

a method for manufacturing a roll coating on a roll frame, which coating comprises a base layer on the roll frame and a surface layer on the base layer. The base layer is brought to its final form (here: compressed state) after the surface layer has been cured.

The subject-matter of claim 1 is therefore also not new regarding D3 (Article 33(2) PCT).

Inventive Step (Article 33(3) PCT)

(6) Document D1, which can be regarded as closest prior art, discloses (see D1: col. 6 l. 23-41; fig. 4a-4c):

a method for manufacturing a roll coating on a roll frame, which coating comprises a base layer on the roll frame and a surface layer on the base layer. The base layer is brought to its final form (here: the compressive layer is filled with a polymer) after the surface layer has been cured.

The method exposed in D1 differs from the method claimed in claims 2 and 4 in that:

the polymer filled into the compressive layer has to be introduced after the curing of the surface layer (in the present application, the polymer that flows into the compressive layer pre-exists as a solid layer near the compressive layer).

The remaining problem can then be considered as:

avoiding the operation of inserting a polymer in the compressive layer after curing of the cover layer.

The solution proposed in claims 2 and 4 of the present application is not suggested in any documents cited in the search report, nor can it be considered as common knowledge in the technical field, therefore, the solution proposed in claims 2 and 4 is considered as involving an inventive step (Article 33(4) PCT).

(7) Document D2, which can be regarded as closest prior art, discloses (see D2: col. 4 l. 40-50; fig. 2; cl. 1, 3, 12-14 and 21):

a method for manufacturing a roll coating on a roll frame, which coating comprises a base layer on the roll frame and a surface layer on the base layer. The base layer is brought to its final form (here: calculated compressed state) after the surface layer has been cured.

The method exposed in D2 differs from the method claimed in claims 3, 5 and 6 in that:

the base layer is not a compressive material but comprises a polymer that shrinks while curing.

The remaining problem can then be considered as:

finding an alternative to the material used in D2.

The solution proposed in claims 3, 5 and 6 represents nothing more than the use of the well known characteristics of a material (here a polymer that shrinks while curing) to solve a problem already known from the prior art. This use, however, does not involve more than employment of well known properties of the material. Hence, no inventive step is present in the subject-matter of claims 3, 5 and 6 (Article 33(4) PCT).

Claims:

1. A method for manufacturing a roll coating onto a roll frame (1), which coating comprises on the roll frame (1) a base layer (2) comprising at least one polymer material layer, and a surface layer (3) on the base layer (2), and in which method the base layer is formed on the roll frame, subsequently the surface layer is formed on the base layer, and the base layer (2) is brought to its final form after the surface layer (3) has been formed and cured or solidified, **characterized** in that the material of the surface layer is selected in such a manner that its curing or solidifying temperature is lower than that of the topmost polymer material layer of the base layer.

2. The method according to claim 1, **characterized** in that the free-space-containing base layer (2) is formed first on the roll frame (1), after which the surface layer (3) is formed on the base layer (2), and after the formation of the surface layer (3), at least a part of the base layer (2) is brought into a liquid form.

3. The method according to claim 1, **characterized** in that the base layer (2) is formed first on the roll frame (1) at least partly of such heat-setting material that shrinks when cured and cooled, after which the surface layer (3) is formed on the base layer (2), and after the formation of the surface layer (3) the base layer (2) is cured.

4. The method according to claim 2, **characterized** in that the base layer comprises a polymer material layer (5) and a reinforcement layer (4).

5. The method according to claim 3, **characterized** in that the base layer comprises a first polymer layer, i.e. adhesive layer (7) and a second polymer layer, i.e. a middle layer (8) formed of mutually different materials.

6. The method according to claim 5, **characterized** in that the first polymer layer comprises reinforcement fibres.

7. A roll comprising a roll frame (1), on the roll frame (1) a base layer (2) comprising at least one polymer material layer having a curing or solidifying temperature, and a surface layer (3) having a curing or solidifying temperature on the base layer (2), **characterized** in the material of the surface layer has the curing

or solidifying temperature which is lower than that of the topmost polymer material layer of the base layer.

Appendix 1.

original claim 1

1. A method for manufacturing a roll coating onto a roll frame (1), which coating comprises on the roll frame (1) a base layer (2) comprising at least one polymer material layer, and a surface layer (3) on the base layer (2), and in which method the base layer is formed on the roll frame, subsequently the surface layer is formed on the base layer, and the base layer (2) is brought to its final form after the surface layer (3) has been formed and cured or solidified, **characterized** in that the material of the surface layer is selected in such a manner that its curing or solidifying temperature is lower than that of the topmost polymer material layer of the base layer.

page 4, lines 18-20; page 4, lines 33-35

original claim 1

page 4, lines 12-16

original claim 1

page 4, lines 7-10